Kepler finds exoplanet in habitable zone

NASA's Kepler spacecraft has detected its first known exoplanet orbiting in its star's habitable zone. Kepler-22b orbits its star in the narrow region where liquid water is potentially possible on its surface.

Exoplanets are planets orbiting distant stars, far from our own solar system. Since the discovery of the first exoplanet 1992, over 700 more confirmed exoplanets have been found, with new discoveries coming in continuously. Given the methods used for finding them, most exoplanets to date have been exotic when compared to the Earth. Most known exoplanets are massive, and lie in extreme orbits either very close to or very far from their stars.

Orbiting the star Kepler-22, the planet (named Kepler-22b) lies in what some astronomers call the "Goldilocks region" which is generally neither too hot nor too cold for liquid water. Because many biologists believe liquid water is essential for the development of the kind of chemistry that can support life, scientists expect that extrasolar life-bearing, Earth-like planets -- if any exist at all -- are likely to be found in this habitable zone.

The Kepler spacecraft finds planets by means of the effect they have on their star's light. As a planet passes in front of its star, it blocks out some of the starlight as seen from Earth. If these drops in light are caused by an orbiting planet, the drops in starlight will occur at regular intervals. Because a planet's speed around its star is determined by the distance at which it orbits, by measuring the period of a planet's orbit astronomers can calculate its distance from its star. Kepler-22b orbits once every 290 days, fairly close to the Earth's own 365-day orbit around the Sun. This places Kepler 22-b within its star's habitable zone. By contrast, Mercury orbits the Sun in only 88 days, while Neptune takes just under 165 years to make a trip around the Sun. In addition, by timing the drops in light, astronomers can estimate the planet's size. Kepler 22b seems to be about 2.4 times the size of Earth, making it the smallest known planet to orbit in its star's habitable zone.

Just because it orbits in its star's habitable zone does not mean that Kepler-22b is necessarily anything like Earth. In the first place, Kepler's methods do not allow astronomers to find information such as a planet's total mass or composition, so it remains to be seen how Kepler-

This article about Kepler 22b is life-changing, It appears to be a habitable zone. Which means that just 588 light years away there may be life, or the basics of life. This is important because there may be even more in our galaxy, and even universe… The potential for life seems even more possible than ever before. This planet is about 2x as big as earth, and orbits its host star every 290days. It appears to have water, but we do not know if terrain is rocky gaseous or liquid It very well could be methane. We know there is an atmosphere which is a big step in the finding the possibilities of life. It would be awesome to find out if there is actually life on this planet but we may never know.